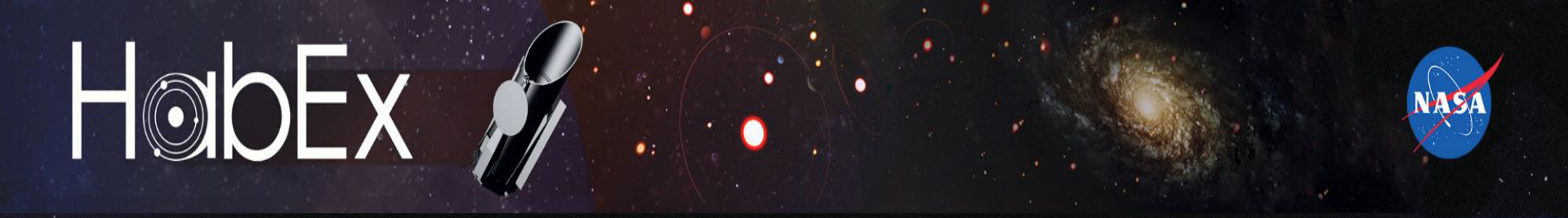


Storyboard Overview

Keith Warfield

10/17/18

Jet Propulsion Laboratory, California Institute of Technology.

Storyboard Purpose and Plan

- The storyboards will help to keep a large number of writers working toward a common document
  - Content and key figures are reviewed as a group
  - Coherent messaging can be organized across the whole document
- Each storyboard represents an important subsection in the report
  - Typically, each will represent 1-5pp of writing in the final report
  - All storyboards are organized around the final report outline
  - Individual authors will be attached to each storyboard
- Each storyboard identifies the key figures in the subsection, the scope of the writing, targeted page count and key messaging
  - Longer sections also include a suggested outline
- We will work on finalizing the storyboard content of several critical chapters at this meeting
  - The Executive Summary will be reviewed by the whole group as part of this presentation
  - The Exoplanet science, the GO science, the Architecture and the Technology sections will be reviewed by break out groups tomorrow
- All storyboards must be reviewed and adjusted by the end of October
- The HabEx Storyboard is on the Sharepoint site:
  - https://gateway.jpl.nasa.gov/sites/HabExSTDTeam/HabExDesignTeam/Shared%20Documents/HabEx%20Final%20Report/HabEx%20FR%20Storyboard%20v3.pptx?Web=1

Key Messages Across the Report

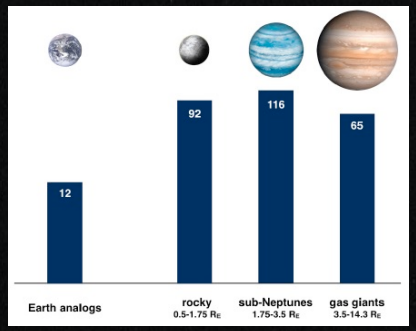
- The time is right for HabEx
- The HabEx science is breakthrough and compelling
  - Exoplanet science addresses one of the greatest questions of all time: are we alone?
  - HabEx has a strong General Astro capability
    - Significant time is allocated GO science; all post-mission time is GO
    - HabEx offers significant advancement on GO capability over HST and other existing space and ground facilities.
- The HST capability must be replaced in the 2030s
  - HabEx is a Great Observatory and HST's successor
- The flexible architecture will allow HabEx to adjust to budget and technology uncertainties
- The coronagraph and starshade are complementary and work better together than individually
- The technological risk is low and can be managed
  - The HabEx telescope can be built with existing industry capabilities
  - The few technologies requiring development are currently being developed and will be ready for a mid-2020 HabEx mission start

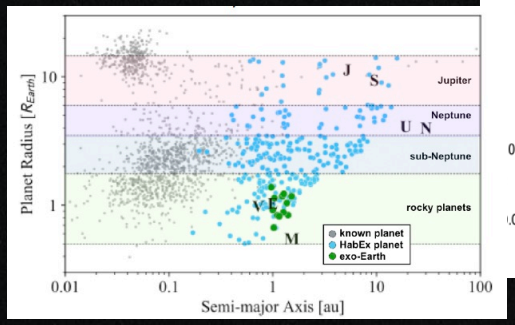
HabEx

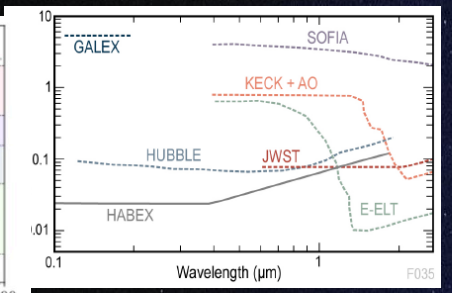
NASA

Executive Summary Storyboard

HabEx Science

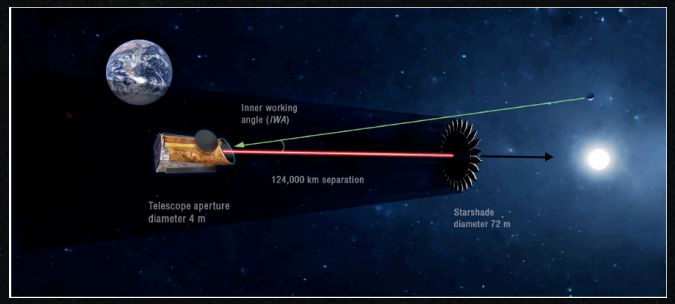


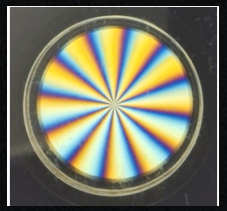


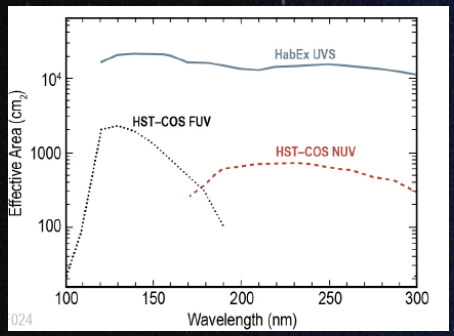


- Scope: Summarize the science goals including a look at expected results
- Outline:
  - Goal 1
  - Goal 2
  - Goal 3
- Key Messages:
  - The science is breakthrough and compelling
  - Strong General Astro capability
  - Advancing on other Great Observatories like HST
- Page Count: 2

HabEx Implementation







- Scope: Summarize the baseline concept design and other possible architectures
- Outline:
  - Tradespace description
  - Baseline description
    - Mission description
    - Telescope description
    - Starshade description
    - Instrument Descriptions
- Key Messages:
  - Flexible architecture will allow HabEx to adjust to budget and technology uncertainties
  - HabEx offers significant advancement on GO capability over HST and other space missions
- Page Count: 3

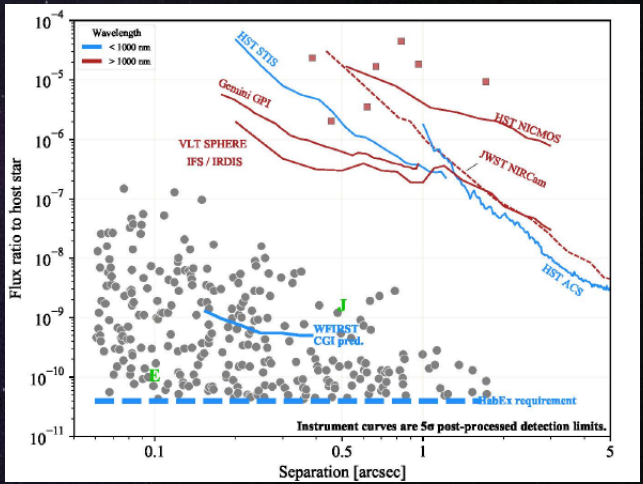
The HabEx Observational Strategy

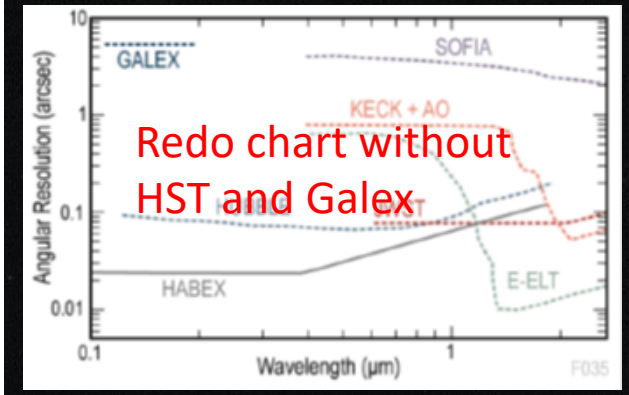
Observational Timeline showing Science Allocations

- Scope: Summarize the baseline observing strategy
- Outline:
  - Exoplanet observing strategy
  - GA observing strategy
  - Extended life through on-orbit servicing with 100% GO science after the primary 5-year mission
- Key Messages:
  - The coronagraph and starshade are complementary and work better together than individually
  - HabEx will have a large GA/GO program
  - HabEx could operate at L2 for decades with servicing
- Page Count: 1

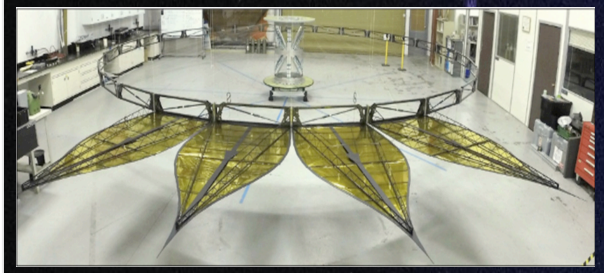
HabEx

Why Now? Scientific and Technological Readiness





Redo chart without HST and Galex



- Scope – Summarize the science gaps advanced by HabEx and the technological readiness of the baseline concept
- Outline:
  - Describe how HabEx science builds on, and compliments, the expected science from other space missions and the ELTs
  - Describe the technological advancements over the last decade that enable the start of HabEx in the next decade
- Key Messages:
  - HabEx is the next logical step in exoplanet and GO science
  - The HST capability must be replaced in the 2030s
  - The technological risk is low and can be managed with HabEx's flexible concept architecture.
- Page Count: 1